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Review of Plant Pathology

A monthly journal compiled from the CAB ABSTRACTS database.
Produced by the DIVISION OF CROP PROTECTION AND GENETICS
in association with the International Mycological Institute

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The journal is available at a special rate to subscribers in countries which make a financial contribution to CAB International. Orders and enquiries concerning subscriptions and back numbers should be sent to the Distribution Manager, Marketing & Distribution Services, at the above address.

The Department of Crop Protection also prepares: *Review of Agricultural Entomology, Nematological Abstracts, Weed Abstracts* and *Seed Pathology and Microbiology.*

How to use Review of Plant Pathology

● Either BROWSE, using the CONTENTS

Within each issue, records are sequenced according to their principal subject matter – see CONTENTS page.

About three quarters of the records are arranged by CROP, so browsing is particularly useful to crop specialists. Within each crop, records are arranged in the order:

- general
- viruses, mycoplasma-like organisms, spiroplasmas, etc.
- fungi
- bacteria
- non-parasitic disorders.

● Or SEARCH, using the INDEXES

Subject indexes and author indexes are compiled monthly and cumulated annually.

SUBJECT INDEX

This guides the user to all the records that make significant reference to specific topics, including the following:

HOST PLANT SPECIES AND GROUPS

English common names are used for major crops, scientific names for minor crops and other plants. Entries point to pathogen species and then to subject headings. Records that refer only to groups are indexed under group names, e.g. cereals, vegetables.

PATHOGEN SPECIES AND GROUPS

Pathogens are indexed under scientific names. Entries point also to host species and other subject headings. Records that refer only to groups are indexed under group names, e.g. bacteria, fungi.

COUNTRY OR REGION

For records where geographical occurrence is of particular relevance.

AGROCHEMICALS etc.

Including common or chemical names, with cross-references from proprietary names. Including chemical elements with well defined deficiency or toxicity syndromes.

VECTORS

OTHER HEADINGS

The main ones are listed here. Scan the ANNUAL INDEX for a more complete picture.

Acid rain	Economics of control	Phytoalexins	Seed testing
Air pollution	Electron microscopy	Plant extracts	Seed treatment
Air spora	Fertilizers	Postharvest decay	Soil
Apparatus	Heat treatment	Records, geography	Soil treatment
Bibliographies	Host parasite relationships	Records, hosts	Spore dispersal
Biological control	Induced mutations	Regulation	Spore germination
Books	Mineral deficiencies	Reports	Storage decay
Conferences	Molecular genetics	Reviews	Storage disorders
Crop losses	Mycorrhizas	Quarantine	Techniques
Cultural methods	Mycotoxins	Seedborne organisms	*Viruses

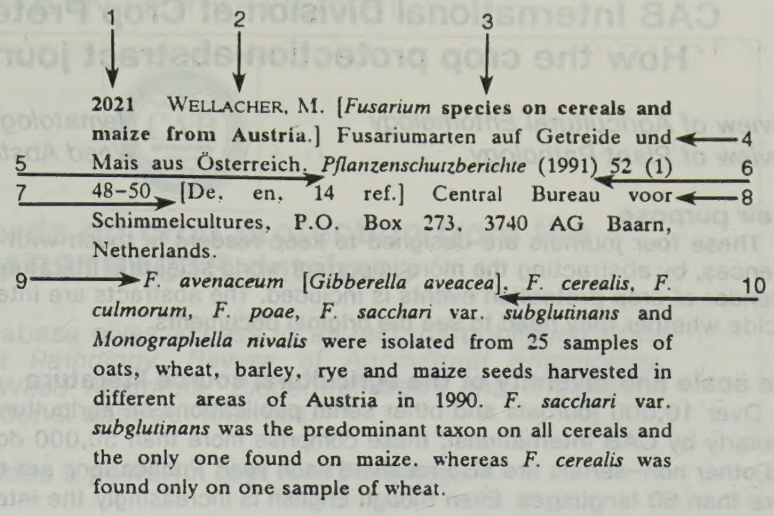
* All relevant records are indexed under viruses, subdivided by virus group name where appropriate. Records are also indexed under hosts and under individual virus names.

AUTHOR INDEX

All authors of each paper are indexed alphabetically by surname. Variants of surnames are also indexed.

A TYPICAL RECORD

1) Abstract No.
2) Author
3) English translation of title
4) Title
5) Journal or other document
6) (Year) Volume (Part) pages
7) Language of text, any other language of summary
8) Address of first author
9) Abstract
10) Preferred name, if the author uses another name. (Names of fungal perfect states are preferred to those of imperfect states.)


1
2
3
2021 WELLACHER, M. [*Fusarium* species on cereals and maize from Austria.] Fusariumarten auf Getreide und Mais aus Österreich. *Pflanzenschutzberichte* (1991) 52 (1) 48-50 [De, en, 14 ref.] Central Bureau voor Schimmelcultures, P.O. Box 273, 3740 AG Baarn, Netherlands.
4
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6
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8
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10
F. avenaceum [*Gibberella aveacea*], *F. cerealis*, *F. culmorum*, *F. poae*, *F. sacchari* var. *subglutinans* and *Monographella nivalis* were isolated from 25 samples of oats, wheat, barley, rye and maize seeds harvested in different areas of Austria in 1990. *F. sacchari* var. *subglutinans* was the predominant taxon on all cereals and the only one found on maize, whereas *F. cerealis* was found only on one sample of wheat.

The title should be read as an integral part of the abstract.

TO OBTAIN A COPY OF THE ORIGINAL ITEM

Use the CAB International Document Delivery Service. A form is printed in this issue.

LIST OF JOURNALS CITED

The annual indexes include an alphabetical list of all journals cited during the year.

ABBREVIATIONS

A number of easily understood abbreviations are used (e.g. sp., species). Initial letters may be used for a virus after its full name has appeared. The following are also used:

a.e.	acid equivalent	EM	electron microscope	SDS	sodium dodecyl sulfate
a.i.	active ingredient	FW	fresh weight	SEM	scanning electron microscope
c.f.u.	colony-forming units	ID	infective dose		
conc.	concentrated	LC	lethal concentration	str.	strain
concn	concentration(s)	LD	lethal dose	w.p.	wettable powder
DW	dry weight	PAGE	polyacrylamide gel electrophoresis		
ED	effective dose				
ELISA	enzyme-linked immunosorbent assay	RH	relative humidity		
		RPP	*Review of Plant Pathology*		

In abbreviations for languages an initial capital denotes the language of the paper, an initial small letter the language of the summary.

Af	Afrikaans	En	English	Ja	Japanese	Pt	Portuguese
Al	Albanian	Eo	Esperanto	Ko	Korean	Ro	Romanian
Ar	Arabic	Es	Spanish	La	Latin	Ru	Russian
Az	Azerbaijani	Fi	Finnish	Li	Lithuanian	Sh	Serbo-Croat (either script)
Be	Byelorussian (White Russian)	Fr	French	Lv	Latvian		
		Gr	Greek	Ma	Macedonian	Sk	Slovak
Bg	Bulgarian	He	Hebrew	My	Malay and Bahasa Malaysia	Sn	Slovene
Ch	Chinese	Hu	Hungarian			Sv	Swedish
Cs	Czech	Ia	Interlingua	Nl	Dutch, Flemish	Ta	Tajik
Da	Danish	In	Indonesian	No	Norwegian	Tr	Turkish
De	German	Is	Icelandic	Pe	Persian	Uk	Ukrainian
Ee	Estonian	It	Italian	Pl	Polish		

CAB International Division of Crop Protection and Genetics
How the crop protection abstract journals are compiled

Review of Agricultural Entomology
Review of Plant Pathology
Nematological Abstracts
Weed Abstracts

Their purpose

These four journals are designed to keep readers in touch with developments in the crop protection sciences, by abstracting the more important world scientific literature and by publishing review articles. A calendar of crop protection events is included. The abstracts are intended to be full enough for readers to decide whether they need to see the original documents.

The scale and diversity of the agricultural source literature

Over 10,000 journals and other serial publications on agriculture and allied disciplines are received regularly by CAB International; these comprise more than 50,000 documents annually. Over 3000 books and other non-serials are also received each year. Publications are received from some 150 countries, in more than 50 languages. Even though English is increasingly the international language of science, some 40% of the literature is in other languages.

Scanning and abstracting the source literature of crop protection

All these documents are scanned by CABI subject specialists and are available to the CABI Division of Crop Protection and Genetics. About 3000 journals, and numerous new books, are scanned regularly in the Division whose staff includes specialists in entomology, plant pathology, nematology, weed science, plant genetics and also linguists.

These specialists identify items within the scope of the four crop protection journals – broadly, scientific documents about agriculturally significant pests (invertebrates, plant pathogens and weeds), beneficial organisms, and relevant crop protection practices and products.

For each item, a record is created consisting of:
- bibliographic information
- an abstract, in English
- subject coding
- index terms.

The CAB ABSTRACTS database

These records are added to the CAB ABSTRACTS bibliographic database. This machine-readable database contains all records published since 1973 in about 50 CABI abstract journals. The total of over 2 million records is growing by more than 150,000 new records per year, of which more than 20,000 per year are on crop protection. The database is available to users for retrospective retrieval and for maintaining current awareness of literature on defined topics. See separate page, and inside back cover.

The crop protection abstract journals

At intervals, relevant records newly added to the database are selected and become the basis for a new issue of one of the crop protection journals. Records are sorted into a standard sequence within each journal issue, according to subject matter. An author index and a subject index are generated. Cumulative indexes are generated at the end of each year.

Scientific links

Each of the four crop protection journals has its own international Editorial Advisory Board of subject specialists. Their members advise on the content and development of the journals, and commission review articles of topical interest.

The CABI Division of Crop Protection and Genetics maintains close contact with the International Institute of Entomology (IIE), the International Mycological Institute (IMI), the International Institute of Parasitology (IIP) and the International Institute of Biological Control (IIBC). These links are especially important in providing the authority for the preferred names of pest organisms used in the journal indexes. IIBC is responsible for compiling the related abstract journal *Biocontrol News and Information*.

The Division of Crop Protection and Genetics is also in close contact with subject specialists in the four other Divisions of the CABI Information Services who compile 45 abstract journals covering the rest of agriculture, forestry and allied disciplines. Comments from users are always welcome. Please write to Mr Geoffrey A. Viney, Division of Crop Protection and Genetics, CAB International, Wallingford, Oxon OX10 8DE, UK.

WORLD SERVICES TO AGRICULTURE

Retrieving records on crop protection from the CAB ABSTRACTS database

The CAB ABSTRACTS database gives access to all records published since 1973 in *Review of Plant Pathology, Review of Agricultural Entomology, Nematological Abstracts, Weed Abstracts, Biocontrol News and Information* and the other CAB International abstract journals.

The database provides a powerful tool for retrieving:

– records from any one of the CONTENTS headings or their subdivisions (more than 200 subdivisions are explained in *CAB ABSTRACTS Online*).

– records containing, for example:
- an author's name
- a plant name
- a pest name (invertebrate, plant pathogen or weed)
- a country name
- a vector name
- the name of a beneficial organism
- an agrochemical name
- a journal name
- any chosen word or phrase (including any index phrase)
- any chosen combination of these.

Retrieval can be:

– ONLINE, using a personal computer or terminal, linked to the telephone system. Output can be printed and mailed to you or, subject to certain conditions, downloaded for local processing.

– From CD–ROM. From 1990, CAB ABSTRACTS data for 1984–1989 are available on CD–ROM.

– By CAB International, who can hold a profile of your interests and send you relevant records on paper or in machine–readable form. This can be done once, or can be updated at intervals.

Further information is available from CAB International.

Full particulars of online hosts are given in the CAB International Agricultural Information Catalogue, available free.

Three books of particular interest to users of the CAB ABSTRACTS database are:

CAB ABSTRACTS ONLINE. A detailed guide to online retrieval.

CAB THESAURUS. A hierarchical list of terms used in indexing all the 50 CAB International abstract journals and the AGRICOLA database of the National Agricultural Library of the USA.

CAB SERIALS CHECKLIST. A list of all titles regularly scanned by CAB International.

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An Institute of CAB International

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Bakeham Lane, Englefield Green, Egham
Surrey, TW20 9TY

Director: Professor D.L. Hawksworth PhD, DSc, FLS, CBiol, FIBiol
Division Heads: Identification and Taxonomic Services: B.C. Sutton, PhD, DSc
Culture Collection and Industrial Services: D. Allsopp, PhD, CBiol, FIBiol, MIInfSc

The International Mycological Institute (IMI), with a staff of about 70 and an annual budget of £1.2m, is the largest centre concerned with systematic mycology in the world. Founded in 1920, the Institute has from the first provided world services to mycologists and workers in related disciplines, particularly plant pathology, medical and veterinary mycology and, more recently, industrial mycology, biodeterioration and biotechnology.

Identification Services
Correct diagnosis of the cause of a disease, spoilage, or industrial problem is the first step in finding an appropriate solution. IMI provides a reliable, up-to-date identification service for about 6000 cultures and specimens each year, received from a wide variety of sources. Tropical plant pathogenic bacteria are also covered.
Staff are involved in wide-ranging research programmes on microfungal systematics. They produce about 80 scientific papers each year and also compile the *Dictionary of the Fungi, Index of Fungi, Bibliography of Systematic Mycology, Systema Ascomycetum, Descriptions of Fungi and Bacteria, Distribution Maps of Plant Diseases, Mycological Papers* and *Phytopathological Papers*.
The Service is provided free of charge to non-commercial users in CABI member countries. Information on the submission of material and details of charges for users in non-member countries and in commercial organizations are available on request.

Culture Collection
The Culture Collection, which incorporates the UK National Collection of Fungus Cultures, maintains over 18,000 strains; it is one of the largest service collections for fungus cultures in the world.
Cultures are available for sale world-wide for industrial, scientific and educational use, and metabolic and physiological data on the strains held are actively added to the collection's databank.
The 10th edition of the Catalogue will be available free of charge early in 1992 and will list over 11,000 strains available from the open collection. Additions to the collection are welcome, especially of fungi otherwise not represented in the collection or of biochemical, economic and industrial importance.
The Culture Collection is recognized as an International Depositary Authority for patent strains under the terms of the Budapest Treaty.

Training
IMI offers a wide variety of training activities, ranging from post-graduate research degrees to one-day specialist seminars. Each year a number of longer courses, including an annual six-week International Course on the Identification of Fungi of Agricultural Importance are held.
Overseas workshops, individual training and tuition for mycologists, plant pathologists and industrial staff are also arranged. Visiting research scientists are welcome to spend time at the Institute as part of their research work.

Plant Pathology Laboratory
The Institute's Plant Pathology Laboratory incorporates the UK Overseas Development Administration Plant Pathology Liaison Unit. Backed by the expertise and information available within IMI, it provides disease diagnosis, technical support and consultancy services for agricultural scientists, advisers, growers and shippers worldwide. Research is also undertaken, primarily on specific problems relating to pathogen variability and characterization.

Consultancy and Contract Services
IMI is able to undertake consultancy assignments involving surveys of disease problems and also consultancy and contract research in any of its fields of activity. Staff can also assist in the preparation of mycological publications on a contract basis.

Biodeterioration and Industrial Laboratory
The laboratory is accredited under the UK National Measurement Accreditation Service (NAMAS) and carries out a wide variety of industrial testing, contract research and consultancies. Over 70 contracts are carried out annually, involving a wide range of materials such as automotive and aircraft parts, museum and library specimens, fuels and lubricants, electrical equipment, building materials and stored foods. Services involving organisms other than fungi can also be arranged, and a tropical testing facility is available.

Yeast Investigation Laboratory
A specialist laboratory, headed by Dr R.R. Davenport, (seconded from AFRC Food Research Institute) has been established in IMI. It provides consultancy, investigatory contract research and training facilities related to specific needs of the food and beverage industries, both in the UK and overseas.

Biochemical Laboratory
The Biochemistry Laboratory acts as a service unit within the Institute for routine and project work. Techniques currently available include detection and screening of fungal enzymes as secondary metabolites (including mycotoxins) and a number of methods for characterizing strains and taxa at a molecular level.

Information
The IMI library holds a unique collection of literature on plant pathology, fungal systematics, medical and veterinary mycology, biodeterioration and fungal biotechnology. Its stocks consist of approximately 1000 current journals, 37,000 volumes and books and 139,000 reprints.
IMI collaborates with the Information Services of CABI in the publication of books and journals in its fields, including seven serial publications.
Literature searches and studies can be carried out to specific individual requirements, and a photocopy service is also available to provide copies of original source literature.

Further details
Please write or telephone for our current Services and Publications booklet and any further information on specific services that you may require. All work is carried out by IMI on a confidential basis, and we will be pleased to discuss your individual requirements without obligation.

Review of Plant Pathology

Contents

Volume 71

MISCELLANEOUS PUBLICATIONS	1	77	155	235	299	377	459	537	619	715	809	903
BACTERIA, GENERAL	1	79	156	237	300	377	459	537	619	715	810	903
FUNGICIDES	5	81	158	238	301	380	461	541	621	717	814	906
ANTIBIOTICS	8	83	162	243	306	382	464	546	625	720	818	908
REGULATION AND QUARANTINE	8	83	162	243	306	383	464	547	625	–	818	908
MYCORRHIZAS	8	83	162	244	307	383	464	547	626	720	818	909
FUNGI, GENERAL	11	88	165	247	309	386	467	550	630	723	822	912
SOILS	14	91	168	249	312	390	471	552	634	727	825	914
SYSTEMATIC MYCOLOGY	14	93	169	249	313	391	472	553	635	727	826	915
TECHNIQUES	15	95	170	251	314	391	474	554	637	730	827	918
VIRUSES	16	96	171	252	315	393	475	555	639	731	828	919
MYCOPLASMA–LIKE ORGANISMS, SPIROPLASMAS, ETC.	20	100	176	253	319	395	481	558	643	734	830	925
CROPS, GENERAL	21	100	176	254	320	396	481	558	644	735	831	925
CEREALS	21	102	178	255	322	398	482	560	645	735	832	928
Wheat (including *Aegilops*)	22	103	180	255	323	399	483	560	646	736	833	931
Barley	26	107	186	258	328	402	488	564	650	739	837	935
Oats	–	108	187	258	329	404	–	565	652	741	838	937
Rye	–	–	–	259	329	404	–	565	653	–	839	937
Triticale	–	108	187	–	329	404	489	–	653	–	–	–
Maize (including *Tripsacum*)	28	108	188	259	329	404	489	566	653	742	839	937
Sorghum	–	110	190	260	331	407	490	566	655	743	840	940
Millets	30	111	190	261	331	407	491	567	656	744	–	940
Rice	31	112	191	261	331	408	491	567	656	744	841	940
Other cereals	–	–	–	–	–	–	–	–	–	–	845	942
FODDER PLANTS	31	114	192	263	334	410	493	569	659	747	845	942
Grasses	32	114	192	263	334	410	493	570	659	747	846	942
Lucerne	32	114	193	263	336	411	494	571	660	748	846	942
Clovers	32	115	193	263	336	412	495	571	661	748	846	942
Other fodder plants	33	115	194	263	336	412	495	572	661	748	847	942
GRAIN LEGUMES	33	115	194	263	337	412	495	572	662	749	847	943
Soyabeans	33	116	194	263	337	413	495	573	662	749	847	943
Faba beans	–	–	196	264	338	415	497	574	663	750	848	943
Phaseolus	34	117	196	265	339	415	498	575	663	750	849	944
Peas	35	119	197	265	340	416	499	576	664	752	849	944
Lentils	–	119	197	–	–	–	499	–	665	753	851	945
Chickpeas	35	120	198	266	340	417	499	578	665	754	851	945
Pigeon peas	37	120	198	266	341	417	–	578	666	754	–	945

Vigna	37	120	199	266	341	418	499	578	666	754	851	945
Other grain legumes	38	121	–	–	–	–	500	–	–	755	852	946
ROOT CROPS	38	121	200	267	341	418	500	579	666	756	852	946
Potatoes	39	121	200	267	341	418	500	580	666	756	852	946
Carrots	42	123	202	269	343	421	504	583	–	758	855	–
Swedes and turnips	–	–	–	–	–	421	–	–	–	758	855	–
Cassava	42	–	202	269	–	421	504	583	670	758	855	–
Sweet potatoes	42	–	203	–	343	421	504	584	670	758	855	–
Yams	–	–	–	–	343	421	–	584	–	–	–	948
Colocasia	–	–	–	269	344	–	505	584	–	–	–	–
Other root crops	43	–	203	269	–	422	–	584	–	–	–	948
LEAFY VEGETABLES, BULB VEGETABLES, STEM VEGETABLES	43	123	203	269	344	422	505	584	670	759	856	948
Allium	43	123	203	269	344	422	505	584	670	759	856	948
Brassica	44	124	204	270	344	423	505	585	671	760	856	949
Spinach	45	–	–	–	345	–	–	–	672	761	–	–
Celery	45	124	–	271	–	423	506	586	–	761	–	950
Lettuces	45	124	205	271	345	423	506	586	672	761	857	–
Other leafy, bulb and stem vegetables (including asparagus and rhubarb)	45	125	205	271	346	424	506	586	–	762	858	950
FRUIT VEGETABLES	45	125	206	271	346	424	506	586	673	763	858	950
Tomatoes	46	125	206	271	346	424	506	587	673	763	858	950
Aubergines	47	128	–	–	347	426	509	590	–	766	860	951
Capsicum	48	128	209	273	347	426	509	390	675	766	861	951
Cucurbitaceae	48	129	210	273	347	428	510	592	676	767	861	952
Other fruit vegetables	50	–	–	275	348	430	–	594	–	–	–	953
TEMPERATE FRUITS	50	130	211	275	348	430	512	595	679	769	862	953
Pome fruits	50	130	211	275	349	430	512	595	680	769	862	954
Stone fruits	52	132	212	276	351	432	514	596	683	771	864	956
Small fruits	52	133	213	277	353	433	514	597	685	771	866	956
Grapes	53	134	214	278	353	434	516	598	686	772	866	959
Other temperate fruits	54	135	215	–	354	–	517	–	687	–	–	960
TROPICAL AND SUBTROPICAL FRUITS	–	–	–	279	354	436	517	599	687	773	868	961
Bananas	54	135	216	279	354	436	517	599	688	773	–	961
Citrus	54	–	216	279	354	437	518	600	689	774	868	961
Mangoes	54	135	216	279	355	438	521	–	690	774	869	–
Pineapples	–	137	–	–	–	–	521	–	–	–	869	963
Litchi	–	–	–	–	–	–	–	–	–	–	870	–
Other tropical and subtropical fruits	55	137	216	–	355	438	521	600	690	775	870	963
NUT CROPS	56	138	216	281	356	438	522	601	691	776	–	964
FATTY OIL PLANTS	57	138	217	281	357	439	522	603	690	776	870	965
Rape	57	138	217	281	357	439	522	603	691	776	870	965
Sinapsis	–	–	–	–	–	–	–	–	–	–	–	–
Linseed	–	–	–	–	357	–	–	–	691	778	–	966
Sunflowers	58	139	218	–	357	439	522	603	693	778	–	966
Safflower	–	–	–	–	358	439	–	603	–	779	–	967
Oil palms	–	139	218	281	–	–	522	603	–	–	874	–
Coconuts	58	139	219	282	358	439	523	603	–	–	874	967
Olives	–	–	219	–	–	440	523	–	–	779	874	–
Groundnuts	58	139	219	282	358	440	523	604	694	779	875	968
Castor beans	59	–	–	–	–	–	–	–	–	782	–	–
Sesame	59	142	220	283	359	441	524	604	695	–	875	–
Other fatty oil plants	–	142	–	283	–	–	–	–	695	782	–	–

SUGAR PLANTS	59	142	221	283	359	442	524	604	695	782	876	968
Sugarcane	59	142	221	283	359	442	524	604	695	782	876	968
Sugarbeet	–	142	221	284	360	442	525	605	695	783	876	969
Other sugar plants	–	–	–	–	–	–	–	–	–	–	–	–
STIMULANT PLANTS	60	143	222	284	361	443	525	605	697	784	877	970
Tea	60	–	222	284	–	–	–	605	697	784	–	970
Coffee	–	–	222	–	–	443	525	606	697	–	877	970
Cocoa	–	–	223	285	361	443	525	–	697	–	877	970
Tobacco	60	143	224	285	361	443	526	606	698	784	878	970
Other stimulant plants	–	–	–	–	–	–	–	–	–	–	–	–
FIBRE PLANTS	62	145	224	286	363	445	527	607	699	786	880	971
Cotton	62	145	224	286	363	445	527	607	699	786	880	971
Flax	63	–	–	287	363	–	528	608	700	–	881	972
Jute	–	–	–	–	–	–	–	–	–	–	–	–
Sisal	–	–	–	–	–	–	–	–	–	–	–	–
Other fibre plants	–	–	–	287	–	–	–	609	701	786	–	972
RUBBER PLANTS	63	145	225	–	364	–	528	–	701	–	882	–
FOREST TREES	63	145	225	287	364	446	528	609	701	786	882	972
Broadleaves	64	146	226	288	365	447	528	609	702	786	882	972
Conifers	65	147	227	289	367	449	529	611	703	787	882	972
ORNAMENTAL PLANTS	69	149	229	290	371	451	530	612	707	789	885	973
MEDICINAL PLANTS, PESTICIDAL PLANTS, SPICE PLANTS, CULINARY HERBS, ESSENTIAL OIL PLANTS, INDUSTRIAL CROPS	72	151	231	292	372	454	532	613	710	792	887	975
EDIBLE FUNGI	72	151	232	293	373	455	534	614	711	–	–	976
PTERIDOPHYTA, BRYOPHYTA, ALGAE, LICHENS	–	–	–	–	–	–	–	–	711	794	–	976
WILD PLANTS	–	–	232	–	373	455	–	614	711	794	888	976
WEEDS	73	151	232	296	373	456	535	615	711	794	888	977
REPORTS	–	152	–	296	375	457	–	616	–	–	889	977
CONFERENCES	74	152	233	297	375	457	535	616	712	795	889	977
BOOKS	74	153	234	297	375	457	535	617	712	795	889	977

AUTHOR INDEX 979

SUBJECT INDEX 1023

List of source journals i

(Note: under each crop, abstracts are arranged in the order: general; viruses, mycoplasma-like organisms, spiroplasmas, etc.; fungi; bacteria; non-parasitic disorders.)

REVIEW ARTICLES

VOLUME 71

Plant diseases in Nepal
By G. Dahal, P. Amatya, H.K. Manandhar 797

A review of the world distribution and host range of *Pyrenophora semeniperda*
By R.W. Medd 891